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ABSTRACT

This report specifies the contributions of the Bureau of Occupational Education Research (BOER) towards establishing an education evaluation system in the New York State Education Department. Section I shows what BOER has done since 1968 in developing an education evaluation system. Thirteen documented examples are given to demonstrate samples of the understandings, insights, personnel, skills, media, data, objective measures, applications, systems, and other resources developed by BOER that can be integrated into almost any type of education evaluation system that is likely to emerge. Section II goes beyond the obvious requirements of more time, money, and manpower to make any such system workable by suggesting the need to coordinate existing departmental functions through a number of organizational "linking pins" and the need to "tool up" existing resources to produce a departmentwide effort to bridge the evaluation gap in a humanistic fashion. Specific examples and directives are given to spell out exactly what is meant by "linking pins" and "tooling up." The report concludes that evaluation is best achieved when the goals of a particular function or unit are expressed so clearly and succinctly that even a stranger walking in off the street can get a clear idea of what is going on and how well it is being done. (Author/DEP)

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Howard P. Alvir

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THE CONTRIBUTIONS OF THE BUREAU OF OCCUPATIONAL EDUCATION RESEARCH TOWARDS ESTABLISHING AN EDUCATION EVALUATION SYSTEM

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SUMMARY

This report specifies the contributions of the Bureau of Occupational Education Research (BOER) towards establishing an education evaluation system in the New York State Education Department. In the introduction, the point of view of BOER is shown to be research with integrated evaluation in the context of Occupational Education; this is made specific by reference to the primary functions of BOER.

Section I shows what BOER has done since 1968 in developing an education evaluation system. Thirteen documented examples are given to demonstrate samples of the understandings, insights, personnel, skills, media, data, objective measures, applications, systems, and other resources developed by BOER that can be integrated into almost any type of education evaluation system that is likely to emerge.

Section II goes beyond the obvious requirements of more time, money, and manpower to make any such system workable by suggesting the need to coordinate existing departmental functions through a number of organizational "linking pins" and the need to "tool up" existing resources to produce a departmentwide effort to bridge the evaluation gap in a humanistic fashion. Specific examples and directives are given to spell out exactly what is meant by "linking pins" and "tooling up."

The report concludes that evaluation is best achieved when the goals of a particular function or unit are expressed so clearly and succinctly that even a stranger walking in off the street can get a clear idea of what is going on and how well it is being done.

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The development of clearly stated, observable, and measurable goals is the first step towards a functioning evaluation system

INTRODUCTION

THE CONTRIBUTIONS OF THE BUREAU OF OCCUPATIONAL EDUCATION RESEARCH TOWARDS ESTABLISHING AN EDUCATION EVALUATION SYSTEM

Objectives

This report tries to answer two questions:

1. What has the Bureau of Occupational Education Research (BOER) done since 1968 towards establishing an education evaluation system? (Section I)

2. What still needs to be done? Specifically, how much more time, money, manpower, and other resources are needed for optimum development? (Section II)

These objectives rest upon two assumptions:

1. That the BOER is not starting from scratch in its efforts to build an education evaluation system.

2. That components of this proposed system exist in BOER and in other units of the State Education Department (SED).

Seen in this perspective, the establishment of an Education Evaluation System does not have to concern itself so much with the creation of a system from zero as much as with the coordination of a number of activities and programs already in existence in a non-interacting framework.

Point of View of BOER

The Bureau of Occupational Education Research (BOER) is the Research Coordinating Unit (RCU) for New York State. Its stress on research and evaluation arises since the unit is within the State Education Department structure under the administrative direction of the Associate Commissioner for Research and Evaluation. Its stress on occupational education arises since its assignments, responsibilities, and functions are specified by the Assistant Commissioner for Occupational Education.

Functions

This general description can be made more specific by consideration of some of the primary functions of BOER and RCU:

1. Administer and manage occupational education research and projects; administer and manage developmental, pilot, and innovative programs funded under the Vocational Education Act by grant or contract to nonprofit organizations.
2. Initiate "in-house" research and evaluation activity.
3. Provide consultant services within and without the Department.
4. Disseminate information and research findings in occupational education.
5. Coordinate occupational education research and evaluation with other research activities within and outside the State.

Section I – What BOER has done to establish an education evaluation system.

Part A – Increase understanding of evaluation as a management tool.

Example 1 – Management by Objectives: The Massachusetts-New York-Pennsylvania Evaluation Service Center for Occupational Education (ESCOE) fulfills three functions:

(Within Local Educational Agencies (LEAs))

a. Statement of Occupational Curricula in Behavioral Objective Terminology.

b. In-Service Training of Occupational Education Staff in Curriculum Writing and Revision.

c. Development of Test Items Which are Valid Measures of Performance.

Example 2 – Dissemination System: As part of the ERIC System and the PREP System, BOER fulfills two functions:

(Within LEAs and SED)

a. Dissemination of the latest results of available research in occupational education.

b. Periodic indepth treatment of topics of interest to occupational educators.

Example 3 – Conference Evaluation: As part of its consultant services, BOER helps various units in the State Education Department in these areas:

(Within SED)

a. Planning and development of built-in criteria which insure that evaluation is not something done after the conference is over.

b. Demonstration of how properly conceived conference goals implement the attainment of objectives that are clearly spelled out and measurable.

c. Specification of certain general criteria which help answer two questions: "What are we trying to do?" and "How will we know when we have succeeded?"

Part B – Secure personnel to carry out evaluation tasks.

Example 4 – Highly Skilled Evaluation Experts

(Coordination between SED and LEAs)

Two Research and Development Centers for Occupational Research have been established at City University of New York and at Cornell University under the direction of BOER to fulfill certain key functions:

a. Adaptation of research coordinated by RCU to urban (CUNY) and upstate (Cornell) occupational educational needs.

b. Training of graduate and undergraduate students in those areas which constitute occupational research.

c. Recruitment of specialists on a consultant basis when such assistance is necessary for particular problem areas.

d. Training and updating of SED, LEA, and administrative personnel when new developments break in occupational education.

Example 5 – Highly Motivated Classroom Teachers and Administrators

(Within LEAs)

Mini-grants (usually about $3,000 each) have been used to stimulate certain kinds of activities which constitute the heart of the daily grind of evaluation tasks:

a. Ability to specify and pinpoint a specific area under the influence of the investigators and the ability to mark off measurable portions thereof.

b. Performance of these evaluation tasks under combat conditions (in the classroom or in the school) rather than in the atypical calm of a laboratory or research center.

c. Provision of other alternatives for the innovative teacher or administrator than reading in the library about what others have done.

d. Opportunity to learn evaluation by doing.

Part C – Formulate specific objectives.

Example 6 – In-Service Training Directed to Problem Solving Through Clarification of Objectives

(Within LEAs and SED)

In various LEAs (through ESCOE and on-site visits) and in various units of SED (through interviews and conferences) BOER has developed the ability in participants in several areas:

a. Clarification of goals and priorities by asking, "What are you trying to do?" and "Why?"

b. Stress upon the necessity to avoid vague and general terms which cannot be tied directly to concrete performance or observable activities.

c. Communication pulling things together, e.g., many problems lack precise objectives because those concerned never sat down together to look at the whole picture.

d. Provision of a neutral perspective that demands that formulation of objectives be expressed in terminology easier to understand than the kind of jargon that sometimes hides the true meaning of a goal.

Example 7 – Publications and Lectures on the Formulation of Clearly Stated and Easily Observable Behavioral Objectives

(Within LEAs and SED, and available to the general public)

Both by brief written handouts and by periodic availability of BOER staff for personal appearances, several practical advantages arise:

a. Formulation of specific objectives for classroom instruction by teachers under the watchful eye of BOER or ESCOE staff members.

b. Editorial assistance and consultant services in the difficult area of expressing profundities in easily understood language.

c. Awareness of the necessity of being able to communicate one's goals in a format and simplicity understandable by the general public.

d. Development of the attitude that "vague goals are not very effective no matter how important they may be."

Part D – Certify measures appropriate to objectives.

Example 8 – Performance Tests

(Within LEAs)

BOER in cooperation with ESCOE and the R and D Centers has been able to develop:

a. Criterion measures which measure a specific performance rather than norm measures which measure aptitude and ability.

b. Methods to identify performance (which is subject to measurement and observation) rather than rely upon subject matter (which is not always visible in changed learner behavior).

c. Examinations which are chosen locally. This means that local autonomy in choice of objective is reinforced by local autonomy in selection of available test items correlated to these same objectives.

d. Availability of evaluation instruments which offer performance options for testing rather than relying solely on the standard paper and pencil type of exam.

Example 9 – Product Evaluation

(Within LEAs and SED)

BOER in cooperation with other SED units has been able to specify the results or product of a number of processes in such a way as to develop more objective measures, e.g.:

a. Evaluation of a conference on the product (results and goals attained) rather than on the process (nice physical facilities and entertaining speakers).

b. Evaluation of education progress for a particular student on the basis of product (what he learned to do and achieve no matter how or where he learned it) rather than on the basis of process (discipline, attendance record, and source of learning).

c. Distinction between essentials and inessentials in the learning process. Thus, teachers will approach evaluation on both the macroscopic and microscopic approach but only when a particular level is appropriate.

Part E – Assure utilization of evaluation products.

Example 10 – Multi-Media Dissemination Beyond the Printed Page

(Within LEAs and SED)

In addition to making available printed and microfiche documents which sometimes go unread, BOER has been able to develop other ways to make educators aware of evaluation research applicable to them:

a. Phone calls on various ties to key educators calling their attention to recent breakthroughs in evaluations similar to their own work.

b. Periodic department conferences which stress BOER evaluation research which can be replicated and used by other SED units.

c. Personal appearances in selected schools through audience participation formats which encourage and permit on-the-spot application of highly specialized evaluation skills.

d. Conferences which call together several hundred of the top specialists in a particular area (in 1971 rehabilitators of ex-drug addicts and behavioral objective writers) to give face-to-face examples of how to apply modern evaluative techniques in the effort to answer the question, "Are our efforts really achieving the results we think they are?"

e. Films, recordings, slides, and video tape presentations have been used for greater visual impact.

Example 11 – Followup Studies

(Within LEAs)

Rather than forget about projects designed to evaluate short-term goals, each funded agency or individual was asked several questions:

a. Did the research funded by us and performed by you have any long-term effects that are measurable?

b. If yes, what are they and how do you measure them?

c. If no, what went wrong once the funding stopped?

Part F – Maintain data storage, retrieval, and dissemination systems.

Example 12 – Publications

(Within LEAs and SED)

In addition to the dissemination of documents provided by PREP, ERIC, and other microfiche services, BOER publishes documents on a number of themes:

a. Current status of various components of the educational scene; these can be used as benchmarks for future evaluation.

b. Tools of research, current trends, and available resources.

c. Characteristics studies of learners and school personnel.

d. Media analysis of appropriate goals, and relevance studies.

e. Studies of systems, subsystems, and programs.

f. Periodic newsletters to give succinct overviews of current trends and major developments.

Example 13 – Computerized Retrieval

The time lag in a printed publication can often be fatal to the unanticipated needs of evaluation researchers. For this reason, it is often necessary to envision other and faster sources:

a. Computerized literature searches.

b. Computerized test writing according to guidelines and objectives chosen by an autonomous teacher.

c. Instant availability of up-to-date and timely data possible only through a centralized computer easily accessible through local input-output terminals.

Section II — What BOER plans to continue to do for future progress in establishing an education evaluation system.

Point of View of BOER

It is self-evident that more time, money, and manpower would aid greatly in establishing an education evaluation system of the first caliber. However, this decision is not in the domain of the tasks and functions currently performed by BOER.

Rather than develop into a lobby or a pressure group, BOER takes the position that being aware of and striving for a unified education evaluation system is one of the best ways of eventually achieving this goal without unduly increasing dollar costs and without neglecting any of its current functions.

Specific Definition of "being aware of" and "striving for"

In addition to the evaluation component which is built into every piece of BOER-related research, BOER feels that it has developed insight, personnel, functions, skills, media, data, objective measures, applications, systems, and other resources that can be integrated into almost any type of education evaluation system that is likely to emerge. These resources were not developed haphazardly; they grew out of concrete responses to documented educational needs and trends. In each specific instance, research and evaluation were developed which could go beyond merely local concerns and which would be implemented by other educators facing similar situations.

All that is needed now is "linking pins" and "tooling up."

Specific Examples of "linking pins"

The basic approach to linking up these services need not necessarily start with an overall hierarchical structure superimposed on existing units. It might better start with coordination.

Coordination basically means communication. Here are a few examples during the period, January to September 1971:

a. BOER-RCU staff members, as a regular part of their functions, furnished consultation to more than 33 units in the New York SED.

b. Similarly, contacts were established with the New York Department of Labor and the Division of Employment, Department of Civil Service, and other State agencies.

c. Likewise, contacts were developed with USOE, National Institute of Mental Health, and other Federal agencies.

In other words, coordination with other agencies does not require adding a person to the staff who does nothing else. It means that every staff member must be able to communicate what BOER is doing and that needless duplication be avoided by seeking out information and expertise available rather than trying to duplicate it needlessly on one's own.

Pulling things together is not usually achieved by legislative fiat. A more efficacious method is in talking about one's job. BOER has numerous documented incidents in which needless duplication was avoided because a BOER staff member told other units and other government agencies what New York SED was doing. This resulted in two benefits: BOER gained from the experience of other units and agencies; the other units and agencies benefited from BOER's expertise; both units increased their effectiveness. In other words, the "multiplier effect" is a better "linking pin" than the establishment of yet another super-bureaucracy or yet another specialist in communication.

Specific Examples of "tooling up"

Tooling up means a number of things. Here are general guidelines to be developed by specifics:

a. The evaluation gap arises from too much data in an undigested and unusable form.

b. The evaluation system which will close the evaluation gap is the system which will be understandable by the man-on-the-street.

c. The man-on-the-street refers to people, e.g., teachers, administrators, graduate students, citizens, who are not professional evaluators.

d. Attempts to disseminate this information must go beyond the distribution of more printed literature.

a. The Evaluation Gap

To bridge the evaluation gap, BOER has developed some general directives to writers of research evaluation:

1. Be brief - The average consumer of research doesn't have enough time to spend more than 10 minutes with what you put in front of his eyes. If your summary presentation points out clearly areas of practical application, the reader will then take the next step to seek out more detailed reports of evaluation systems and techniques.

2. Be transmittable - If you have done a good job of writing up evaluation research, you will most likely be approached in person or by phone. Your comprehension of the particular aspect in evaluation must be transmittable in a face-to-face exchange of ideas and questions. If your language is only comprehensive to specialists and professional evaluators, you will not be able to deliver the goods no matter how important and how practical your evaluation information may be.

3. Be flexible - Replication means that someone will do your evaluation research over again in exactly the same circumstances. Flexible adaptation means that your evaluation research will be applied in similar circumstances and in answer to similar challenges. Once you use brief-to-the-point language instead of technical jargon, you will be ready to tailor and adjust evaluation to slightly different settings.

b. The Man-on-the-Street

To reach the nonspecialist and the nonprofessional consumer of educational research, BOER has developed a few guidelines:

1. Use simple language which can be understood by all.

2. Try to use presentations which do not rely on a built-in necessity to use the lecture method.

3. Stress the objectives and values of the particular aspect of evaluation being presented.

c. The Nonprofessional Evaluator

In presenting the nonspecialist with evaluation research information, several things must be remembered:

1. Complicated presentations are not the best introduction.

2. Educational leadership sometimes means spelling out how the consumer of research can apply it to his own situation. It is a mistake to presume that the non-specialist will see all the implications for himself.

3. Since evaluation development really means staff development, it must be remembered that the first efforts of the nonprofessional evaluator will not result in perfectly finished products. It is often better to stress gradual improvement rather than unattainable ideals.

d. Beyond Paper and Pencil and the Printed Page

To stimulate educators to think of evaluation as something more active and penetrating than checklists and paper and pencil test questions, BOER has developed other alternatives:

1. Sometimes a phone call to the right person will do more to get someone to utilize an evaluation technique than will tons of documents received in the mail.

2. Asking the question, "What one thing is most important among all the objectives you want to evaluate?" can often get the beginning evaluator to stress essentials rather than get bogged down in nonessentials.

CONCLUSION

BOER-NCU staff members have gone through many evaluation research documents in the period June 1970 to October 1971. About 90 percent of these evaluations had the following conclusion:

> "All Project X needed for greater success was more money, time, personnel, and other resources."

Such a conclusion is invariably true of any evaluation effort. A realistic approach would be to assume this and to try to do one's best with available resources.

As pointed out above, the alternatives to lobbying and pressuring for more resources are not limited to doing nothing.

Two concrete activities are spelled out above. One is to start coordinating existing services by exchange of information whenever possible in an already busy schedule of activities. The other is to start tooling up existing functions and operations. One must realize that

- evaluation starts with the beginning of any project and not at the end;
- evaluation is best achieved when the goals of a particular function are expressed so clearly and succinctly that even a stranger walking in off the street can get a clear idea of what is going on and how well it is being done.
- in other words, evaluation is essentially linked to the development of clearly stated, observable, and measurable goals.

Most people know what they are trying to do whether or not they are evaluation specialists. The person who is becoming a better evaluator is able to clearly explain to a nonprofessional exactly what a particular function is all about. This is much better than substituting technical hardware for "brainware."

APPENDICES

Example

1. Massachusetts and New York Evaluation Service Center for Occupational Education.

2. ERIC ... and the New York RCU

3. Conference Feedback: Using Goal Awareness Instead of Sepaker-by-Speaker Evaluation

4. Institutes for Occupational Education Research

5. The Mini-Grant

6. A Brief Description of the Massachusetts - New York Evaluation Service Center

7. Saving Educational Dollars Through Quality Objectives

8. A Measurement of Skill by Performance Testing

9. Manpower Conference Feedback

10a. Newsletter

10b. "Simulation Materials to Improve Occupational Awareness

10c. Using Programmed Instruction With and Without Self-Instructional Practice to Teach Psychomotor Skills

11a. Entry Requirements in Registered Apprentice Training

11b. Career Programs in Two-Year Colleges

11c. The Selection of Students for Entrance into Trade Programs in Public Secondary Schools

11d. A Survey of Secondary School Graduates in New York State

11e. A Study of Manpower Development and Training Act Programs in New York State

11f. A Survey of Manpower Needs in the Commercial Nursey Industry

11g. The Status and Role of Lunchroom Aides in Selected New York State School Districts

11h. Final Report: Manpower Supply and Demand in Nassau-Suffolk

11i. Study of Articulation Program Between Nassau Community College and Topic House

11j. Evaluation of Secondary School Programs to Prepare Students for Wage Earning in Occupations Related to Home Economics

Example

12a. Measuring Relationships Among and Between Cognitive and Affective Behaviors in a Controlled Learning Situation

12b. A Simulated Instructional Model for Educating Mentally Retarded Students for Employment in the Hotel-Motel Industry

12c. An Investigation of the Reliability and Validity of Selected Occupational Competency Examinations and Their Use in Evaluating Prospective Trade and Industrial Teachers

12d. A Followup of New York State High School Bookkeeping Students

12e. A Comparative Study of High School Graduates from 1-Year, Full Day and 2-Year, Half Day Vocational Programs in Suffolk County, New York

12f. The Extent of Registered Apprentice Training in New York State

13a. Automatic Business Data Processing in New York State Secondary Schools

13b. Automatic Data Processing in New York State

14a. Guidelines in Business Education

14b. The Process and Product of Machine Shorthand Programs in New York State Schools

14c. Elementary and Secondary Education Vouchers

14d. Cooperative Federalism

14e. The Attitudes of School Board Members Toward Occupational Education

14f. Application of the Extended School Year Concept to a Board of Cooperative Educational Services Occupational Training Program

14g. The Impact of a Rescheduled School Year on Vocational Training Centers in New York State

14h. Shared Educational Services in New York State Emphasis-Occupational Education Programs

ANNOTATED EXAMPLES

Example #14a.

This publication (Guidelines in Business Education) developes various guidelines and the rationale behind each aspect of the evaluation of business education.

Example #14b.

This publication (The Process and Product of Machine Shorthand Programs in New York State Schools) developes guidelines for the inauguration of new curricula.

Example #14c.

This publication (Elementary and Secondary Education Vouchers) stresses alternatives to educational financing in view of product evaluation by the ultimate consumers, parents, and students in school.

Example #14d.

This publication (Cooperative Federalism) points out the obvious link between Federal dollars and Federal evaluation. In this perspective evaluation is seen as a cooperative enterprise.

Example #14e.

This publication (The Attitudes of School Board Members Toward Occupational Education) shows the link between school board attitudes evaluation and educational dollars.

Example #14f. & g.

These two publications (Application of the Extended School Year Concept to a Board of Cooperative Educational Services Occupational Training Program & The Impact of a Rescheduled School Year on Vocational Training Centers in New York State) point out that evaluation must be something that begins with a project. If it is put off until the end, evaluation is done too late.

Example #14h.

This publication (Shared Educational Services in New York State Emphasis--Occupational Education Programs) gives an example of criteria that have been developed on a cooperative basis. The point to note is the process of a criteria development. This same process will lead to many different criteria in different circumstances.